



NM_001768 & M27161
Homo sapiens (Human)
Complete CD8 alpha mRNA

Predicted polypeptide sequence

MALPVTALLLPLALLLHAARPSQFRVSPLDRTWNLGETVELKCQ
VLLSNPTSGCSWLFQPRGAAASPTFLLYLSQNKPKAAEGLDTQRFSGKRLGDTFVLT
SDFRRENEGYYFCSALSNSIMYFSHFVPVFLPAKPTTTPAPRPPTPAPTIASQPLSLR
PEACRPAAGGAVHTRGLDFACDIYWAPLAGTCGVLLLSLVITLYCNHRNRRRVCKCP
RPVVKSGDKPSLSARYV

mRNA

1 gaaatcaggc tccgggcccgc ccgaagggcg caacttccc cctcggcgc cccacggct
61 cccgcgcgc tccctcgcg ccgagcttc gagccaagca gctcctggg gagcgcgtca
121 tggccttacc agtgaccgcc ttgctctgc cgctggcctt gctgctcac gccgccagge
181 cgagccagtt ccgggtgtcg ccgctggatc ggacctggaa cctgggcgag acagtggagc
241 tgaagtgcc ggtgctgtg tccaaccga cgtcgggctg ctgtggctc ttccagccgc
301 gcggcgccgc cgcagctcc acctctctc tataccttc ccaaaacaag cccaagggg
361 ccgaggggct ggacaccag cggtctcgg gcaagaggtt gggggacacc ttgctctca
421 cctgagoga ctccgcga gagaacgagg gctactatt ctgctggcc ctgagcaact
481 ccatcatgta ctccagccac ttgtgcccg tctcctgcc agcgaagccc accacgaagc
541 cagcgccgcg accaccaaca ccggcgccca ccctcgcgc gcagccccg tccctgcgc
601 cagagggctg ccggccagcg gcggggggcg cagtgcacac gagggggctg gacttcgct
661 gtgatatca catctgggcg ccttggcgc ggactgtgg ggtccttc ctgtactgg
721 ttatcacct ttactgcaac cacaggaacc gaagacgtgt ttgcaaatgt ccccggcctg
781 tggtaaatc gggagacaag ccagcctt cggcgagata cgtctaacc tgtcaacag
841 ccactacatt actcaaaact gagatcctc ctttgaggg agcaagtcct tcccttcat
901 ttttccagt ctctccct gtgtattcat tctcatgatt attatttag tgggggcggg
961 gtgggaaaga ttacttttc ttatgtgt tgacgggaaa caaaactagg taaaatctac

FIG._1A-1

1021 agtacaccac aagggtcaca atactgttgt ggcacatcg cggtagggcg tggaaagggg
1081 caggccagag ctaccgcag agttctcaga atcatgctga gagagctgga ggcacccatg
1141 ccatctcaac ctctccccc cccgttttac aaagggggag gctaaagccc agagacagct
1201 tgaacaaagg cacacagcaa gtcaggggtg gagcagtagc tggagggacc ttgtcicca
1261 gtcaggggt ctctctcca caccattcag gtcttcttt cggaggcccc tgtctcaggg
1321 tgagggtgct gagtctcaa cggcaaggga acaagtaact ctgtatactt gggatactgt
1381 gccagagcc tcgaggaggt aatgaattaa agaagagaac tgccttggc agagtctat
1441 aatgtaaaca atactagact tttttttt ataactaagc ctaaaattgt atagacctaa
1501 aataaaatga agtggtgagc ttaaccttg aaaatgaatc cctctatctc taaagaaaat
1561 ctctgtgaaa cccctatgtg gaggcggaat tgctctcca gcccttgcac tgcagagggg
1621 ccatgaaaag aggacaggct acccctttac aaatagaatt tgagcactag tgaggtaaa
1681 ctaaggccct ctgaatctc tgaatttgag atacaaacat gttcctggga tcaactgatga
1741 cttttatc tttgtaaaga caattgttg agagccctc acacagccct ggcctctgt
1801 caactagcag atacagggat gaggcagacc tgactctctt aaggaggctg agagccaaa
1861 ctgctgtccc aaacatgcac ttcttgctt aaggtatgtt acaagcaatg cctgcccatt
1921 ggagagaaaa aacttaagta gataaggaaa taagaaccac tcataattct tcacctagg
1981 aataatctcc tgtaatatg ggtacattc ttctgatta tttctacac atacatgtaa
2041 aatatgtctt tctttttaa ataggggtgt actatgctgt tatgagtggc ttaatatgaat
2101 aaacatttgt agcatctct ttaatgggta aacagcaaaa aaaaaaaaaa aaaaaaaaaa
2161 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2221 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a

FIG. 1A-2

NM_171827

Homo sapiens secreted protein derived from alternate transcript

Predicted polypeptide

MALPVTALLPLALLHAARPSQFRVSPLDRTWNLGETVELKCQVLLSNPTSG
CSWLFQPRGAAASPTFLLYLSQNKPKAAEGLDQRFSGKRLGDTFVLTLSDFR
RENEGYFCSALSNSIMYFSHFVPVFLPAKPTTTPAPRPPTPAPTIASQPLSLR
PEACRPAAGGAGNRRRVCKCPRPVVKSGDKPSLSARYV

mRNA

1 gaaatcaggc tccgggccgg cgaaggcg caacttccc ccctcgggc cccacggct
61 cccgcgcgc tccctcgc cccgagctc gagccaagca ggcctctgg gagcgcgtca
121 tggccttacc agtgaccgc ttgctctgc cgctggcct gctgctcac gcgcaggc
181 cgagccagt ccgggtgtc ccgtggatc ggacctgaa cctgggcgag acagtggagc
241 tgaagtcca ggtgctgtg tccaaccga cgtcgggctg ctgtggctc ttccagccg
301 ggggcgcgc cgcagtcac acctctctc tataccttc caaaacaag cccaaggcg
361 ccgaggggct ggacaccag cggctctcg gcaagaggt gggggacacc ttgctctca
421 ccctgagca cttccgcga gagaacgag gctactatt ctgctggcc ctgagcaact
481 ccatcatgta ctcagccac ttgtgcgg tcttctgcc agcgaagccc accacgacg
541 cagcgcgcg accaccaaca cggcgccca ccatcgctc gcagccctg tccctgcgc
601 cagagggctg ccggccagc gcgggggcg cagggaaccg aagacgtgt tgcaaatgt
661 cccggcctgt ggtcaaatc ggagacaag ccagccttc ggcgagata gtctaaccct
721 gtgcaacag cactacatta ctcaaacg agatcctcc tttagaggga gcaagtcct
781 cccttcatt ttccagtc ttctcctg tgtattcatt ccatgatta ttatttagt
841 gggggcgggg tgggaaagat tacttttct ttatgtgtt gacgggaaac aaaactagg
901 aaaatctaca gtacaccaca agggtcaca tactgtgtg cgcacatgc ggtagggcg
961 ggaaaggggc aggcagagc taccgcga gtctcagaa tcatgctgag agagctggag

FIG. 1B-1

1021 gcacccatgc catctcaacc tcttccccgc ccgttttaca aagggggagg cttaaagcca
1081 gagacagctt gatcaaaggc acacagcaag tcagggttgg agcagtagct ggagggacct
1141 tgtctccag ctccagggtc ttctctccac accattcagg tcttcttcc cgaggccct
1201 gtctcagggt gaggtgcttg agtctccaac ggcaagggaa caagtacttc ttgatacctg
1261 ggatactgtg cccagagcct cgaggaggta atgaattaaa gaagagaact gccttggca
1321 gagttctata atgtaaacaa tatcagactt ttttttta taalcaagcc taaaattgta
1381 tagacctaaa ataaaatgaa gtggtgagct taacctgga aaatgaatcc ctctatctt
1441 aaagaaaatc tctgtgaaac ccctatgtg aggcggaatt gctctccag ccttgcatt
1501 gcagaggggc ccatgaaaga ggacaggcta ccccttaca aatagaattt gagcatcagt
1561 gaggttaaac taaggccctc ttgaatctct gaatttgaga tacaacatg ttctgggat
1621 cactgatgac ttttatact ttgtaaagac aattgttga gagccctca cacagccctg
1681 gcctctgctc aactagcaga tacagggatg aggcagacct gactcttta aggaggctga
1741 gagcccaaac tgctgtcca aacatgcact tcttgctta aggtatgga caagcaatgc
1801 ctgcccattg gagagaaaaa acttaagtag ataaggaaat aagaaccact cataattctt
1861 caccttagga ataattctct gttaatatgg tgtacattct tctgattat ttctacaca
1921 tacaigtaaa atatgtctt ctttttaaa taggggtgta ctatgctgtt atgagtggct
1981 ttaatgaata aacatttga gcatcctctt taatgggtaa acagcaaaaa aaaaaaaaaa
2041 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2101 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa

FIG._1B-2

X60223
Pongo pygmaeus (Orangutan)
Complete CD8 alpha mRNA

Predicted polypeptide

MALPVTALLPLALLLHAARPSQFRVSPLDRTWNLGETVELKCQ
VLLSNPTSGCSWLFQPRGAAASPTFLLYLSQNKPKAAEGLDTQRFSGKRLGDTFVLT
SDFRRENEGYYFCSALSNSIMYFSHFVPVFLPVHTRGLDFACDIYIWAPLAGTCGVLL
LSLVITLYCNHRNRRRVCKCPRPVWKS GGKPSLSERYV

mRNA

1 atggccttac ccgtgaccgc ctgtctctg ccgctggcct tgtgtctcca cgccgccagg
61 ccgagccagt tccgggtgtc gccgctggat cggacctgga acctgggcga gacgggtggag
121 ctgaagtgcc aggtgtgtct gtccaaccgc acgtctggct gctcctggct cttccagccg
181 cgtggcgccg ccgccagtcc cacctctctc ctatacctct cccaaaacaa gcccaaggcg
241 gcgagggggc tggacacca gccgtctcgc ggcaagaggt tgggggacac cttcgtctc
301 acctgagcg acttcgccg ggagaacgaa ggctactatt tctgtcggc cctgagcaac
361 tcatcatgt acttcagcca cttcgtgcgc gtcttctgc cagtgcacac gagggggctg
421 gacttcgct gtgatatcta catctgggcg ccctggccg ggacctgtgg ggtcctctc
481 ctgtcactgg ttatcacct ttactgcaac cacaggaacc gaagacgtgt ttgcaaatgt
541 ccccggcctg tggtaaatac tggaggcaag ccagccttt cggagagata tgtctaa

FIG. 1C

XM_132621 & BC030679 & U34881
 Mus musculus (Mouse)
 Complete CD8 alpha mRNA

Predicted polypeptide

MASPLTRFLSLNLLLLGESIILGSGEAKPQAPELRIFPKKMDAE
 LGQKVDLVCEVLGVSQGC SWLFQNSSSKLPQPTFVVMASSHNKITWDEKLNSSKLF
 SAMRDTNNKYVLTlnKFSKENEGYYFCSVISNSVMYFSSVVPVLQKVNSTTTKPVLRT
 PSPVHPTGTSQPQRPEDCRPRGSVKGTGLDFACDIYWAPLAGICVALLLSLIITLIC
 YHRSRKRVCCKPSIACLCLKLQGSKWYESVICSALAVSIRC�KSKSGELPLAVHLDIR
 APCKNWEIAGSLVERYGKSGKHSPLSLKAVVESN

mRNA

1 atggcctcac cgttgacccg cttctgtcg ctgaacctgc tgcctctggg tgagtcgatt
 61 atcctgggga gtggagaagc taagccacag gcacccgaac tcgaaatctt tccaaagaaa
 121 atggacgccg aacttggtca gaagggtggac ctggtatgtg aagtgttggg gtccgtttcg
 181 caaggatgct cttggctctt ccagaactcc agctccaaac tccccagcc caccttcgtt
 241 gtctatatgg ctcatccca caacaagata acgtgggacg agaagctgaa ttgcgcgaaa
 301 ctgttttctg ccatgaggga cacgaataat aagtacgttc tcacctgaa caagttcagc
 361 aaggaaaacg aaggctacta ttctgtctca gtcatcagca actcggatgat gtacttcagt
 421 tctgtcgtgc cagtccttca gaaagtgaac tctactacta ccaagccagt gctgcgaact
 481 cctcacctg tgcaccttac cgggacatct cagccccaga gaccagaaga ttgtcggccc
 541 cgtggctcag tgaaggggac cggatgggac ttgcctgtg atatttacct ctgggcaccc
 601 ttggccggaa tctgcgtggc cttctgtctg tcttgatca tcaactctcat ctgctaccac
 661 aggagccgaa agcgtgtttg caaatgtccc agtatagcat gcttgtgcct caaactgcaa
 721 ggaagcaagt ggtatgaatc tgtgatctgc tcagctctgg ctgtgagcat cagatgtaac
 781 aatcaaaagt caggagaact gcccttagcg gtgcacctgg acatcagagc cccttgtaag
 841 aactgggaaa ttgctggcag tctagtggag cggtaaggta aatctggaaa acactccct
 901 ctgtcactga aggctgtagt agaatccaat taa

FIG._1D-1

Predicted polypeptide

MDAELGQKVDLVCEVLGSVSQGCSWLFQNSSSKLPQPTFVVYMA
 SSHNKITWDEKLNSSKLF SAMRDTNNKYVLT LNKF SKENEGYYFC SVISNSVMYFSSV
 VPVLQKVNSTTTKPVL RTPSPVHPTGTSQPQRPEDCRPRGSVKGTGLDFACDIYIWAP
 LAGICVALLLSLIITLICYHRSRKRVC KPRPLVRQEGKPRPSEKIV

mRNA

1 cgttgacccg cttctgtcg ctgaacctgc tgcctgtggg tgcgtcgatt atcctgggga
 61 gtggagaagc taagccacag gcacccgaac tccgaatctt tccaaagaaa atggacgccg
 121 aacttggtca gaagggtggac ctggtatgtg aagtgttggg gtccgtttcg caaggatgct
 181 cttggtctt ccagaactcc agctccaaac tccccagcc caccttcgtt gtctatatgg
 241 cttcatccca caacaagata acgtgggacg agaagctgaa ttctgcgaaa ctgttttctg
 301 ccatgaggga cagcaataat aagtacgttc tcacctgaa caagttcagc aaggaaaacg
 361 aaggctacta ttctgtctca gtcatcagca actcgggtgat gtacttcagt tctgtcgtgc
 421 cagtccttca gaaagtgaac tctactacta ccaagccagt gctgcgaact cctcacctg
 481 tgcacctac cgggacatct cagccccaga gaccagaaga ttgtcggccc cgtggctcag
 541 tgaaggggac cggattggac ttgcctgtg atatttcat ctgggcaccc ttggccggaa
 601 tctgcgtggc cttctgtctg tcttgatca tctctcat ctgctaccac aggagccgaa
 661 agcgtgtttg caaatgtccc aggccgctag tcagacagga aggcaagccc agaccttcag
 721 agaaaattgt gtaaatggc accgccagga agctacaact actacatgac ttcagatctc
 781 ttcttgcaag aggccaggcc ctcttttctc aagtttctg ctgtcttatg tattgccctc
 841 tgtattgtt tagtaggggt gtgatgggga cagttcctt ttctttatga attctcttg
 901 acacaaagca tactgtatg catacaatgg gagtaatgag cagactgtaa caccagagct
 961 agttccagtt tcggggcca tgcgtcgtg ggcctcagca ccacttgat ataaatctcc
 1021 tgtctgcca tcatatagaa gaagctgaag atcagagggtg gaaacagcag gatctgtaga
 1081 cccggagaga acccaagcta gaggaacct cactgactgg tgcagggatc tcaccccat
 1141 cccctgagct ctctgtttag gtatgtgtct ttagtatagc atgcttgtgc ctcaaactgc
 1201 aaggaagcaa gtggtatgaa tctgtgatct gtcagctct ggctgtgagc atcagatgta
 1261 acaaatcaaa gtcaggagaa ctgcctttag cgggtcacct ggacatcaga gcccttgta
 1321 agaactggga aattgtggc agtctagtgg agcggtagcg taaatctgga aaacactccc
 1381 ctctgtcact gaaggctgta glagaatcca attaaagcta ttcaaaccac aaaaaaaaaa
 1441 aaaaaaaaaa aa

FIG. 1D-2

Predicted polypeptide

MASPLTRFLSLNLLLMGESIILGSGEAKPQAPELRIFPKMDAE
LGQKVDLVCEVLGVSQGC SWLFQNSSSKLPQPTFVVYMASSHNKITWDEKLNSSKLF
SAVRDTNNKYVLTlnkfsKENEGYYFCsvISNSVMYFSSVVPVLQKVNSTTTKPVLR
T
PSPVHPTGTSQPQRPEDCRPRGSVKGTGLDFACDIYIWAPLAGICVAPLLSLITLIC
YHRSRKRVCCKPRPLVRQEGKPRPSEKIV

mRNA

1 atggcctcac cgttgacccg cttctgtcg ctgaacctgc tgctgatggg tgagtcgatt
61 atcctgggga gtggagaagc taagccacag gcaccogaac tccgaatctt tccaaagaaa
121 atggacgccg aactggcca gaaggaggac ctggtatgtg aagtgtggg gtccgttcg
181 caaggatgct ctggctctt ccagaactcc agctocaaac tccccagcc caccttogg
241 gtctatatgg ctcatocca caacaagata acgtgggacg agaagctgaa ttgtcgaaa
301 ctgtttctg ccgtgaggga cacgaataat aagtacgttc tcacctgaa caagtcagc
361 aaggaaaacg aaggctacta ttctgtctca gtcacagca actcggatg gtacttcagt
421 tctgtctgc cagtcctca gaaagtgaac tctactacta ccaagccagt gctgcgaact
481 cctcacctg tgcacctac cgggacatct cagccccaga gaccagaaga ttgtggccc
541 cgtggctcag tgaaggggac cggattggac ttgcctgtg atatftacat ctgggcaccc
601 ttggccggaa tctgcgtggc cctctgtctg tcttgatca tcacttcat ctgtaccac
661 aggagccgaa agcgtgttg caaatgtccc aggccgctag tcagacagga aggcaagccc
721 agacctcag agaaaattgt gtaa

FIG._1D-3

NM_031538
Rattus norvegicus (Rat)
Complete CD8 alpha mRNA

Predicted polypeptide

MASRVICFLSLNLLLLDVITRLQVSGQLQLSPKKVDAEIGQEVK
LTCEVLRDTSQGCSWLFRNSSSELLQPTFIIYVSSSRSKLNDILDPNLF SARKENNKY
ILTLSKFSTKNQGYFCSITSNSVMYFSPLVPVFQKVNSIITKPVTRAPTPVPPPTGT
PRPLRPEACRPGASGSVEGMGLGFACDIYWAPLAGICAVLLLSLVITLICCHRNRRR
VCKCPRPLVKPRPSEKFV

mRNA

1 ccctagagcc ctgcttgac ctaaggtgct ggtgggacgc acaccatggc ctacagggtg
61 atctgcttc tgcgctgaa cctgctactg ctggatgta tcactaggct ccaggtttcc
121 ggacagttac agttgtcacc aaagaaagtg gacgctgaaa ttggccagga ggtgaagcta
181 acatgcgaag tgctgcgga cacttcgcaa ggaatgctt ggctcttcg gaactccagc
241 tcgaactcc tcagcccac ctcatcatc tatgtatct catcccgag caagctgaac
301 gatatactgg atccgaatct gttctctgcc cggaaggaaa acaacaaata catctcacc
361 ctgagcaagt tcagcactaa aaaccaaggc tactattct gctcaatcac cagcaactcg
421 gtgatgtact tcagtcctct ggtgccggtg ttccagaaag tgaactctat taccaccaag
481 ccggtgacgc gagctccac accagtgcct cctctacag ggacaccccg gccctacga
541 ccagaagctt gccgaccgg ggcgagtggc tcagtggagg gaalgggati gggcttcgcc
601 tgcgatattt acatctgggc accctggcc ggaatctgcg cggttctct gctgtccctg
661 gtcatcatic tcactctctg ccacaggaac cgaaggcgtg ttgcaaag tcccaggccc
721 cttgtcaagc ccagacctc agagaaatc gtgaaaatg gcgccactag gaagccacaa
781 ctactacatg acttcagaga ttctcacia gagaccgggc cctctttt cagagtttc
841 tgctggctta tatattgtc tctgtattgt tttagggga ggaaggggac agttccttt
901 tcttatgaa ttctcttga tacaaaacat actgtatgc acacaatggg gtaaagatca
961 gactgtaaca ccagagatag tccagtttc agggtcagcg tagctggtg

FIG. 1E

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AY303773

Cavia porcellus (Guinea Pig)

Complete CD8 alpha mRNA

Predicted polypeptide

MAPRGSAWLLLLPVALLLDAATAQGASQFRMSPRELVAQVGTKV

TLRCEVLVPNAPAGCSWLFQPRHDAKGPTFLLYHSASGTKLAPGLEQKRFSPSKSSNT

YTLTVNSFQKRDEGYFCSVSGNMMLYFSPFVPVFLPAPRTTTPPPPTTPTPSVQPT

SVRPETCVVSKGAAGARWLDLSCDVYIWAPLASTCAALLLALVITIICHRNRNRQRVCK

CPRPQARSGGKPSPSGKLV

mRNA

1 gcaactccc cactgcgcac cccctggctc ctggtggctc ctgggcggct cccctcacgc
 61 ctggactcca ggctctgccc tgcgcgagg agcgcgcgcc atggccccgc gaggaagcgc
 121 ctggtctctg ctgctgccgg tggccctgct gctcgacgcc gccacggccc aaggtgccag
 181 tcagttccga atgtaccccc gtgaactggt cgcgcaagtc ggcaccaaag tgacctgctg
 241 ctgtgagggt ctggtgccta acgcgcgggc gggatgctcg tggctcttcc agccccgcca
 301 cgacgccaaa ggtccacact tctctctgta ccattcggcg tccgggacca agttggcccc
 361 agggctggaa cagaagcgat tcagccctc gaagagcagt aacacctaca cctcacggt
 421 gaacagcttc cagaagcgag acgaaggcta ctactctgc tcggtctccg gcaacatgat
 481 gctctacttc agcccgctcg tcccgctct cctgccagct cctcgacca cgacgcccc
 541 tccccctccc accacgcgca ccccgagct gcagcccacg tcggtgcgcc ccgagacgtg
 601 tgtggtctct aaggcgcgag cagggtcgag gtggctggat ctctctgtg atgtctacat
 661 ctgggcgccc ctggccagca catgcgcggc cctctgctg gcactggtca tcacgatcat
 721 ctgccaccgc aggaacagac aacgcgtttg caaatgtct agggcccaag ccaggctctg
 781 aggcacaacc agccctcag ggaagttagt ctaacaacat ggcgcccagc ctgtgcgaag
 841 ccactacatg actttatact gagatcatt ctggacagc aagtgtctct ctttgggt
 901 tccagctct ccttctatg tattgttct cattactatt ttagtgggca tgggtggga
 961 agagttgctt ttctgtaga caaaaaataa aaccatgtag catctgcagc tcacaaggt
 1021 cacagggtct ttacctaca caggggttag gtagcaagc agggctctca ggtactggaa
 1081 ttactccct tccactact tgagggtggg cagcaccac gggtcattta tccctcatca
 1141 tgctctcca ccaactgag ctcatatgcc acccaaagag cagtctatct aaaccaggc
 1201 caaacacatg caactgctt ttgaaccga gagcctaatt tatctgcaga gaatgcaagt
 1261 gctccttgt cactatac ttgtcatga ccttaataa atgtgctgct ttccctcaa
 1321 aaaaaaaaaa

FIG. 1F

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NM_174015
Bos taurus (Cow)
Complete CD8 alpha mRNA

Predicted polypeptide

MASLLTALILPLALLLLDAAKVLGSLSFMSPTQKETRLGEKVE
LQCELLQSGMATGCSWLRHIPGDDPRPTFLMYLSAQRVKLAEGLDPRHISGAKVSGTK
FQLTLSSFLQEDQGYFCSVVSNSILYFSNFVPVFLPAKPATTPAMRPSSAAPTSAPO
TRSVSPRSEVCRTSAGSAVDTSRLDFACNIYIWAPLVGTGCVLLLSLVITGICYRRNR
RRVCKCPRPVVRQGGKPNLSEKYV

mRNA

1 gaattcggat ccaccatggc ctactcttg accgccctga tctgcogct ggccctgctg
61 ctgctgatg ccgccaaggt cctcgggtcg ctctgttcc ggatgtcgcc gacgcagaag
121 gagaccagac tgggcgagaa ggtggagctg caatgcgagt tgctgcagtc cggcatggcg
181 acagggtgct cctggctccg ccacataccc ggggacgacc ccagaccac cttoctaag
241 tacctctccg cccaacgggt caagctagcc gagggactgg accccagaca catttcggc
301 gccaaaggct ccggcaccaa attccagctc accctgagca gcttctcca ggaggaccaa
361 ggctactatt ttgtctgggt cgtgagcaac tcgatactgt acttcagtaa ctctgtcct
421 gtcttctgc cagcgaagcc ggccaccacg ccggcgatgc ggccatccag cgcggcgccc
481 accagcgcgc cgcagactag gtccgtctct ccgcgatcag aggtgtgccg gacctggcg
541 ggcagcgcag tggacacgag ccggctggac ttgcctgca atatctacat ctgggctccc
601 ttggtcggga cctgcggcgt ccttctctg tcattgtca tcacaggcat ctgctaccg
661 cggaaccgaa gacgtgtctg caaatgtccc aggcctgtgg tccgacaagg aggcaagccc
721 aaccttcag agaaatatgt ctaacatggc gatgggcccc gtgtgacagc cactacaaga
781 ctgcactg agaactctcc tgagatcctt ccttttgat ttccctgc ttcttctt
841 ctgttatta ttattttca tgggggtggg gtgggaagag ttacttttc ttattattt
901 actttgatac aaaacaagac actcgtgtct aaggcatacc acaagggtta tcatgctgtt
961 gtgctcccat actcgggtag agggcgggcg ggccagagct accgcaagct ctattctag

FIG._1G-1

1021 aacctggctg tgagaactgg tgggggcctc ggcacccact cagccccaac ttctcctcca
1081 cccattttac aaaagaggac gctgaggccc agagatgggg aacagctgga tcagagtccc
1141 agcagggctc cacacaactg agatctttct tctggaggcc tctgtctcag cgtgggggagc
1201 tggatctcaa gcctcagaga actagtatt tctgaagcat ctgtgataga cccatgactg
1261 caccagagc ctgatgagg taatgaaata ggacaagaaa acttgacaga gttctgtgat
1321 actgctgaac aggatcagat tttttttt ataataaagc atgaaatgat acagataata
1381 ggaattcttc caatgaagtg gaaggagtga actgaatgat ggaaaatgag caacctgacc
1441 tctgaagaaa atctctggga aatccagacc tggagatggt tctccagacc ctgtattgc
1501 agaaggaccc tcaaagagga gaggccaccc tctgcaagca tgatttgagc gttaggaaag
1561 ttgaatggag ttcaagtctc tctaaacatt gagattccgt attcaaacaat gctcctgggt
1621 tatcgggtgag tttttatagt ttgtaaaggg agaattgtga ccgagcagct ggcacaggcc
1681 ctggcacccc aggctagcag ctgagggaat gtgcagacac tggtaggag gctacgagcc
1741 cagctgcagc cctacaaggc atttccctcc ttactgtgtt ctgcaaaaaa tgcattgctca
1801 ctgggagaaa aaatgtagct aaggtagtaa gaatcatccg taattcttta cctcagggat
1861 aatcattgt taatattatg ggctacattc ttctgatta tttctgtgc cctacatata
1921 aaatatataa ttttataaaa tgggattgca ctatgctttt ataatggct ttaataaaca
1981 aacatttatg gcttacttct t

FIG. 1G-2

AY517855
Sus scrofa (Domestic pig)
Complete CD8 alpha mRNA

Predicted polypeptide

VELQCELMHSNTLTSCSWLYQKPGAASKPIFLMYLSKTRNKTAE
GLDTRYISGYKANDNFYLILHRFREEDQGYFCSFLSNSVLYFSNFMVFLPAKPTKT
PTTPPKRTPTKASHAVSVAPEVCRPSGNADPRKLDLACDLYNWAPLVGTSGILLLSL
VITIICHRNRNRVCKCPRPVVRQGGKASPSEFI

mRNA

1 gtggagctgc agtgcgagtt gatgcactcc aacacactga caagctgttc ctggctctac
61 cagaagccgg gggctgcctc caagcccatc ttctcatgt acctctcaa aacccggaat
121 aagacagccg aggggctgga caccogttac atctctgggt acaaggccaa tgacaacttc
181 taacctatcc tgcaccgctt ccgcgaggag gaccaaggct actatttctg ctogttctctg
241 agcaactcgg tttgtattt cagcaacttc atgtccgtct tcttgccagc aaagcccacc
301 aagacgccga ctacgccacc acccaagcgg actcccacca aagcgtcgca cgcgtgtct
361 gtggccccag aggtgtgccg gccttcgggc aacgcagacc cgaggaagct ggacctgcc
421 tgtgatctgt acaactgggc gcccttggtt gggacctccg gcatccttct cctgtcactg
481 gtcacacca tcactgccca ccgccgaac agaagacgtg ttgcaaatg tcccaggccc
541 gtggtcagac agggaggcaa ggccagccct tcagagagat tcactaaca tggcgacatg
601 cccacgcag cagccactac aagacctcaa actgagacct ctccgggcag gagagcaagg
661 gtctttctt ttccgtttcc ccagccttcc ttcttctt aagtattctt ctattatta
721 ttatttccat gggggtgggg tgggaagggt gacttttct ttgggtgtt actttaattg
781 acacaaaacg agactctatc acgtcttgg tacgcgcag gggtcgaac accgttgtc
841 tcacacacac aacggtgaag ggtgggcggg ccagagctac cgcaagctgt gttctcagaa
901 ccaggctgtg agagctggtg gggggtgggg aggcctcgg caccacaca ggccaaacct
961 ctccccctgc ccccatfitt acaaaggaat gaggctgagg ccagagatg ggggggtggt

FIG._1H-1

1021 ggatcagagc cccagcaagg ctccaggctc atcctccaca gcatttgggc ctctctcca
1081 ggggccctcg tctcagctgg gggagctg tctccacct caaggaaaca aggtttgctt
1141 gggcacctgt gatagactct gcactgtgcc cagagccccg gggaggcaat gcagtaagtc
1201 aaggggacgt gacagaggtc tacggtgcag ttgaacagga tcagatatat ttttttaat
1261 aatccagcat gaagttatat agataacagg aattcctcaa atagagtga agggctgaac
1321 tgaatcctgg aaagtgaaca acacgacctc taaaggaaat ccaatgcaaa aaatctctaa
1381 gtggagacac agtggctctc ccaggggacc catgaaagag gggaagccgc cctttgcaaa
1441 tatgattga gcatcgcgaa agtcgaacgg aggtcggccc tctctaaatg tgagatctga
1501 tattigaacg tgctcctcgg atcattgatg gggttttttg gtttgtaaac acagaattat
1561 gaccgagtag ctggcctccc ctggaccagc agctgtggat atggggcaga ctctgatgag
1621 gaggctagga gccagactg ctgccctcta cgcgcatttc ctctctaac catgtgtac
1681 aagaaatgcg tgctcgctgg aagaaaaaac taaataataa gagtcacca taattctta
1741 ctctggtat aactcattgt taatattatg gtgtacattc ttctgatta tttctatgc
1801 acgtatataa aatgtatact ttttaaaaat ggaattgtac tatgcttta gaagtggtt
1861 taataaacat ttctgctatg aaaaaaaaaa a

FIG. 1H-2

D16536
Felis catus (cat)
Complete CD8 alpha mRNA
Predicted polypeptide

MASPVTAQLLPLALLLHAAAAAGPSPFRLSPVRVEGRLGQRVEL
QCEVLLSSAAPGCTWLFQKNEPAARPIFLAYLSRSRTKLAELDPKQISGQRIQDTLY
SLTLHRFRKEEEGYFCSVVSNSVLYFSAFVPVFLPVKPTTTPAPRPPTQAPITTSQR
VSLRPGTCQPSAGSTVEASGLDLSCDIYWAPLAGTCAFLLLSLVITVICNHRNRRRV
CKCPRPVVRAGGKPSPSERYV

mRNA

1 atggcctctc cggtgactgc ccagctcctg ccgctggcct tgcgtctca tgccgccgca
61 gccgccgggc cgagcccgtt ccgcttatcg cccgtgaggg tggagggcag gctcggccag
121 cgggtggagc tgcagtgcga ggtgctgctg tcacagcgcg cgccgggctg cacctggctc
181 ttccagaaga acgaacctgc cggccgcccc atcttcttgg cgtacctctc cagaagccgg
241 accaagtgg ccgaggagct ggaccccaaa cagatctcgg gccagaggat tcaggacacc
301 ctctacagtc tcacctgca cagattccgc aaggaggaag aaggctacta ttctgtctg
361 gtgtgagca actccgttct gtacttcagc gccttcgtcc cggttcttct gccagtcaag
421 cccaccacta cgcccgcgcc gcgaccgccc acgcaggcgc ccatcaccac gtgcagcgg
481 gtgtctctgc gcccggggac ctgccagcct tcagcgggca gcacagtgga agcaagtggg
541 ctggatttgt cctgtgacat ctacatctgg gcacccctgg ctgggacctg cgccctctt
601 ctctgtgcg tggatcacat cgtcatctgc aaccacagga accgaagacg tgttgcaaa
661 tgtccgaggc ccgtggtcag agcaggaggc aagcctagcc cgtcagagag atacgtctaa
721 catggagatg ggcccatgc accagccact acaagaccaa ataaaactct ctttatgagg
781 acagt

FIG. 11

AY065643

Sigmodon hispidus (Hispid cotton rat)

Complete CD8 alpha mRNA

Predicted polypeptide

MAPRVTRFLCLTLLEFJAELGGSKDFEMSPKKVVAHLGKEVRL

TCEVWVSTSQGCSWLFLEHGSGVKPTFLIYLSGSRNERNNKIPSTKLSGKKEDKKYTL

TLNNFAKEDEGYFCSVTSNSVVFSPPLSVFLPEKPTTPVPKPPTSVPPTAISRLR

PEACRPGAGTSVEKKGWDFDCDIILAPLAGLCGVLLLSLVTTLICCHRNKRKRVCKCP

RPVVRQGGKPSPSGKLV

mRNA

1 ctctgcttg acctaagctg ctggtggaag cactgccatg gccccccggg tgacccgctt
 61 tctgigcctg accctgctgc tggaaattat cgctgagctc ggaggctoga aagatttoga
 121 aatgtctcct aagaagggtg tcgccacctc tggcaaggag gtgaggctaa catgcgaagt
 181 gtgggtgtct acttcgaag gatgctcttg gctcttcctg gagcatggct ccggaggtaa
 241 acccactttc ctcatctatc tctctgggag ccgcaacgaa cggaataaca aaataccttc
 301 aactaagcta tctgggaaga aggaagacaa aaagtacacc ctacccctga ataatttgc
 361 taaggaagac gaaggctact attctgcctc tgcacaagc aactcgggtg tgtacttcag
 421 tctctcgtg tcggtcttct tgccagagaa acctaccaca ccagtgccga aaccacccac
 481 atcagtgcgc actacggcga tatctcggtc cctgcgacca gaagcttgcg gacctggagc
 541 cggcacctca gtggagaaga agggatggga ctgcgactgt gatatcatca ttctggcacc
 601 cttagctgga ctctgtgggg tctctctgct gtctctggtc accacactca tctgctgcca
 661 caggaacaga aaacgagctc gcaaattgcc caggcccgtg gtcagacaag gaggcaagcc
 721 cagcccttca gggaaactcg tgtaagatgg cgccaagaaa ctacaactac tacttcagag
 781 acctctcat ctagagctcc agctctcctt ctcaatttt tctcaccttc ctatatattg
 841 ttctttgat tattttagtg ggggtaggac aggggtggaa ccatttctt tctttatgaa
 901 ttcactttga cacaaaacaa gaccacataa tgtccacggg ataccataag ggcaggagct
 961 gttgctgcgt acatagcatg tgggggaagt acagaacagc tgtctgggtt ctgaggatca
 1021 gtggatgac agcaccactc tgatgatcta aatgccctgt ctgccatta tatagaagag
 1081 gtgaaggtc agaaatgggg tgggcaggat ctgtgcacca ggagagaacc caagctgacg
 1141 aaatcctcac tggatggctc agggaaactg cctctataac ctgagttctc ttatttcagg
 1201 cctgtgcctg gtagtgtgta ggctgagta

FIG._1J

AJ130818
Saimiri sciureus (Common Squirrel Monkey)
Complete CD8 alpha mRNA

Predicted polypeptide

MASPV TALL LPLALL HAARPSRFRV SPLDRTWN LGDKVELKCE
VLLSNPSSGCSWLFQKRGAAASPTFLLYISQTKPKVADGLDAQRFSGKKMGDSFILTL
RDFREEDQGFYFCSALSNSIMYFSPFVPVFLPAKPTTTPAPRPPTPEPTTASQPLSLR
PQACRPPAGGAVDTRGLDFACDIYWVPLAGTCGVLLLSLVITVYCNHRNRRRVCKCP
RPAVKSGGKPSPSERYV

mRNA

1 atggcctctc cctgaccgc cttgctcctg ccgctggccc tgctgtcca cgctgccagg
61 ccgagccggt tccgggtgtc gccgctggat cggacctgga actggggcga caaggtggag
121 ctgaagtgcg aggtgctgct gtccaacccg tctcggggt gctcgtggct cttccagaag
181 cggggcgctg ccgccagccc cacttctc ctgtacatct cccaaaccaa goccaagggtg
241 gccgatgggc tggacgcca gcgcttctcc ggcaagaaga tgggggacag cttcattctc
301 accctgcgcg acttcgcga ggaggaccag ggcttctatt tctgctcggc cctgagcaac
361 tccatcatgt acttcagccc ctctgtgccg gtcttctgc cagcgaagcc caccacgacg
421 ccagcgccgc gaccaccac accggagccc accaccggt cgcagcccct gtccctgct
481 ccacaggctt gccggcccc gccggggggc gcagtggaca cgagggggct ggacttcgcc
541 tgtatatct acatctgggt gccctggcc gggacctgcg gggctctct cctgtcactg
601 gtcatcaccg ttattgcaa tcacaggaa cgcgcacgtg ttgcaaatg tccccggcct
661 gcggtcaagt ctggaggcaa gccagccct tcggagagat acgtctaa

FIG._1K

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Domains of the CD8 α -ChainsLeaderTransmembrane**Human CD8 α -Chain**

Protein:

MALPVTALLL	PLALLLHAAR	PSGFRVSPLD	RTWNLGETVE	LKCGVLLSNP
TSGCSWLFGP	RGAAASPTFL	LYLSGNKPKA	AEGLDTGRFS	GKRLGDTFVL
TLSDFRRENE	GYFCSALSN	SIMYFSHFVP	VFLPAKPTTT	PAPRPPTPAP
TIASGPLSLR	PEACRPAAGG	AVHTRGLDFA	<u>CDIYIWAPLA</u>	<u>GTCGVLLLSL</u>
<u>VITLYCNHRN</u>	RRRVCKCPRP	VVKS GDKPSL	SARYV	

mRNA - coding

atggccttac	cagtgaccgc	cttgctcctg	ccgctggcct	tgctgctcca
cgccgccagg	ccgagccagt	tccgggtgtc	gccgctggat	cggacctgga
acctgggcga	gacagtggag	ctgaagtgcc	aggtgctgct	gtccaaccgc
acgtcgggct	gctcgtggct	cttcagcccg	cgcggcgccg	ccgccagtec
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tggacaccca	gcggttctcg	ggcaagaggt	tgggggacac	cttcgtcctc
accctgagcg	acttccgccg	agagaacgag	ggctactatt	tctgctcggc
cctgagcaac	tccatcatgt	acttcagcca	cttcgtgccg	gtcttcctgc
cagcgaagcc	caccacgacg	ccagcgccgc	gaccaccaac	accggcgccc
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ggcggggggc	gcagtgcaca	cgagggggct	ggacttcgcc	tgtgatatact
<u>acatctgggc</u>	<u>gcccttggcc</u>	<u>gggacttgtg</u>	<u>gggtccttct</u>	<u>cctgtcactg</u>
<u>gttatcaccc</u>	<u>tttactgcaa</u>	<u>ccacaggaac</u>	<u>cgaagacgtg</u>	<u>tttgcaaata</u>
tccccggcct	gtggtcaaata	cgggagacaa	gcccagcctt	tcggcgagat
acgtctaa				

FIG._2A

mouse CD8 α -Chain

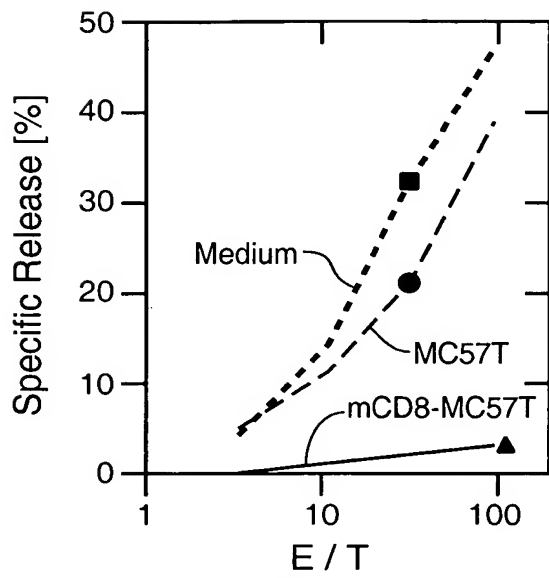
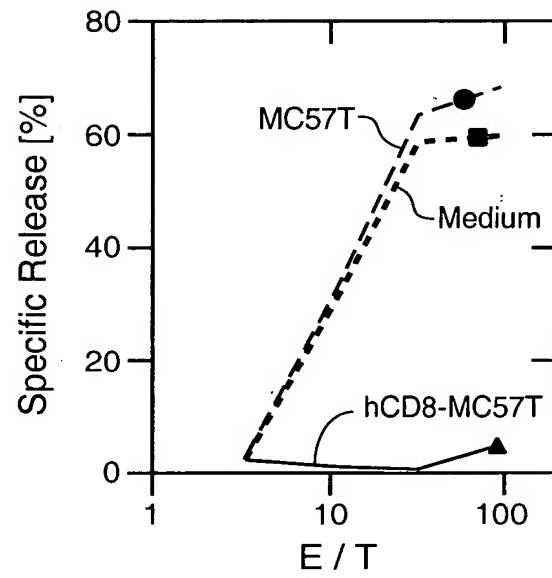
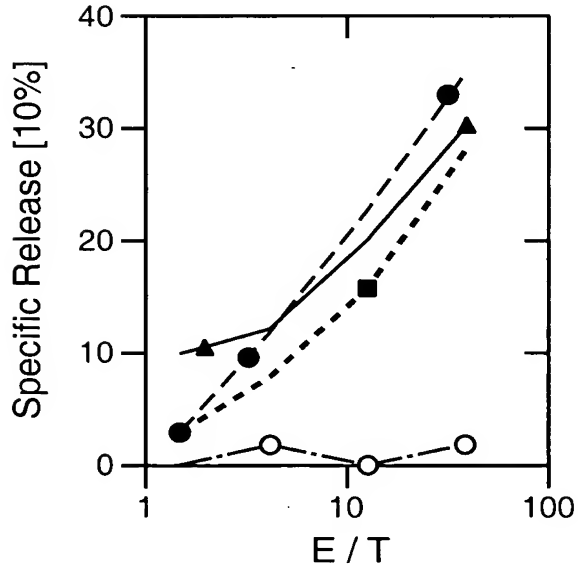
Protein:

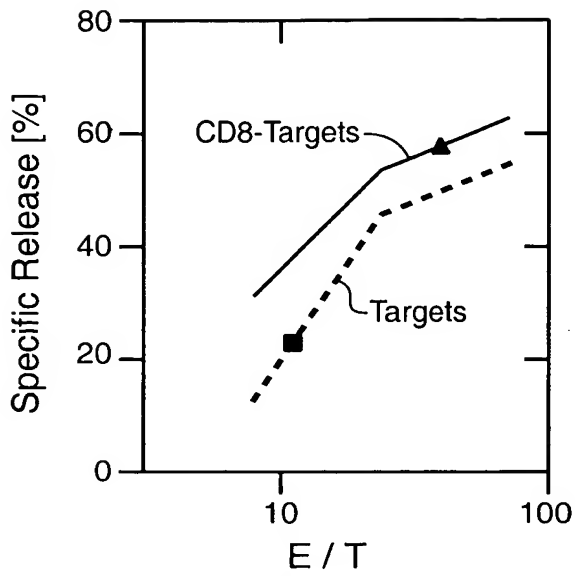
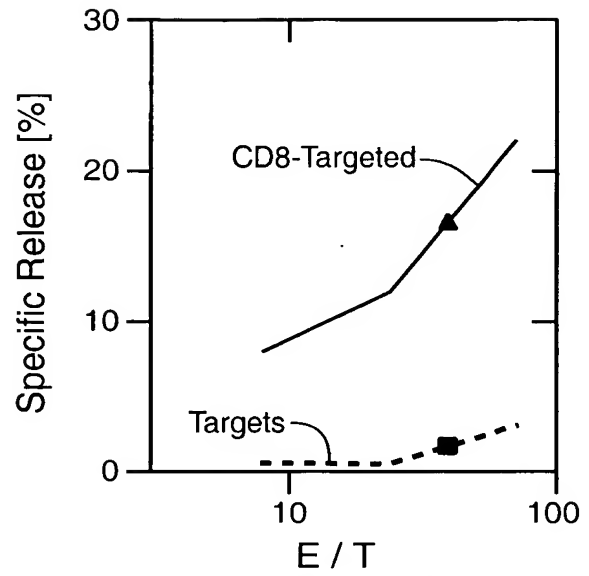
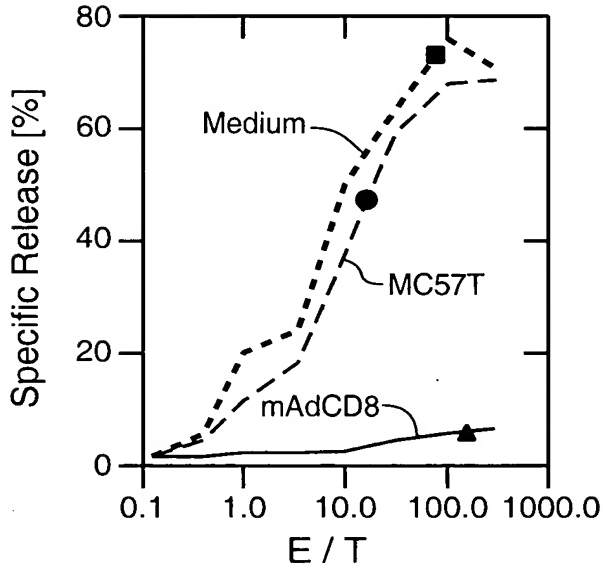
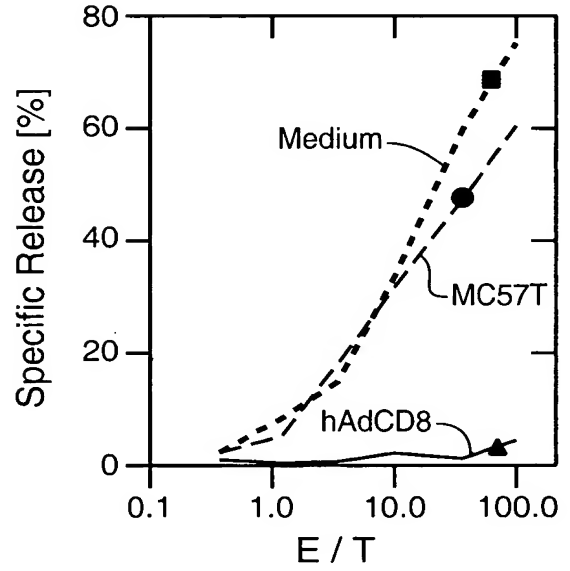
MASPLTRFLS	LNLLLLGESI	ILGSGEAKPG	APELRIFPKK	MDAELGGKVD
LVCEVLGSVS	GGCSWLFGNS	SSKLPGPTFV	VYMASSHNKI	TWDEKLNSSK
LFSAMRDTNN	KYVLTNLNDFS	KENEGYYFCS	VISNSVMYFS	SVVPVLGKVN
STTTKPVLRT	PSPVHPTGTS	GPGRPEDCRP	RGSVKGTGLD	FACDIYIWAP
<u>LAGICVALLL</u>	<u>SLIITLICyh</u>	RSRKRVCCKP	SIACLCLKLG	GSKWYESVIC
SALAVSIRCN	KSKSGELPLA	VHLDIRAPCK	NWEIAGSLVE	RYGKSGKHSP
LSLKAVVESN				

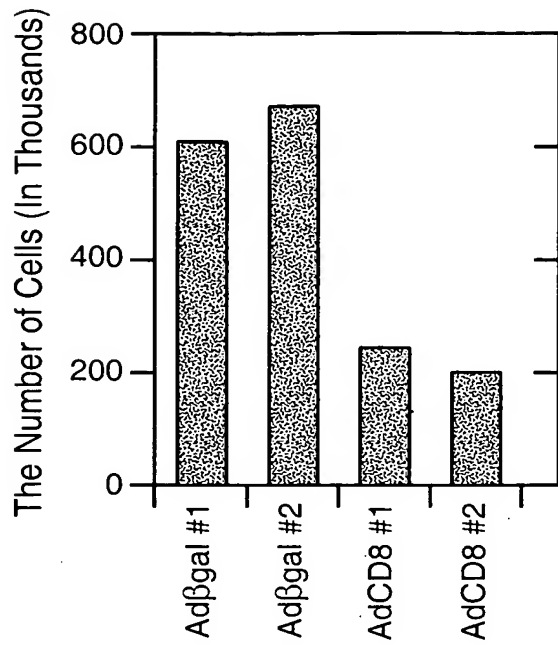
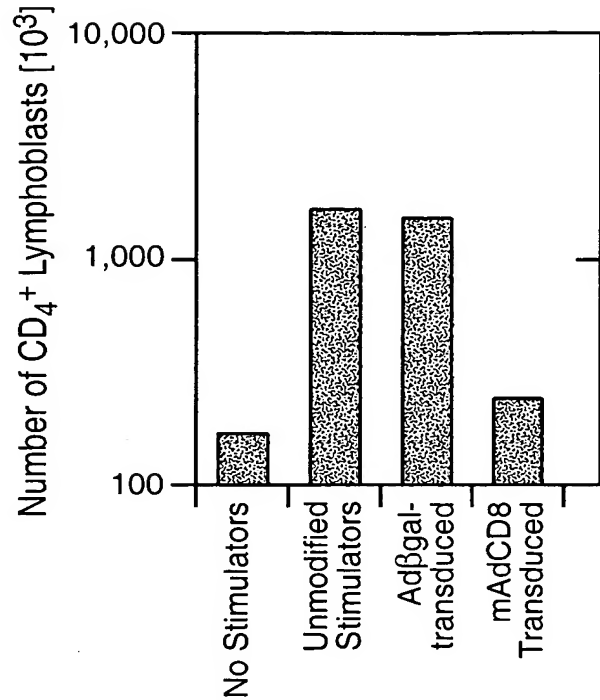
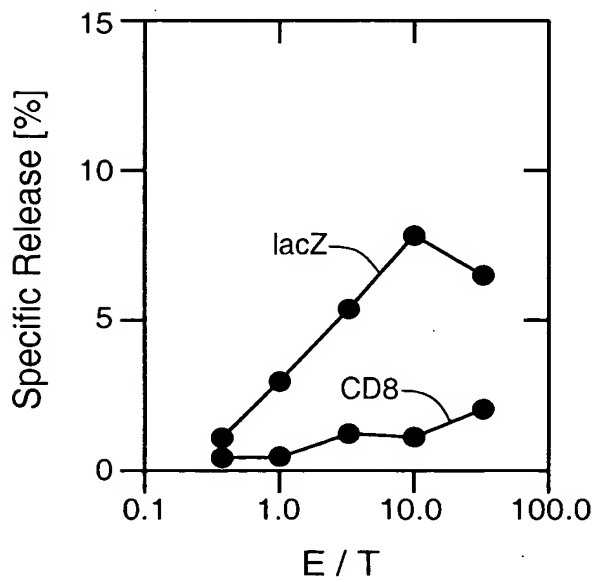
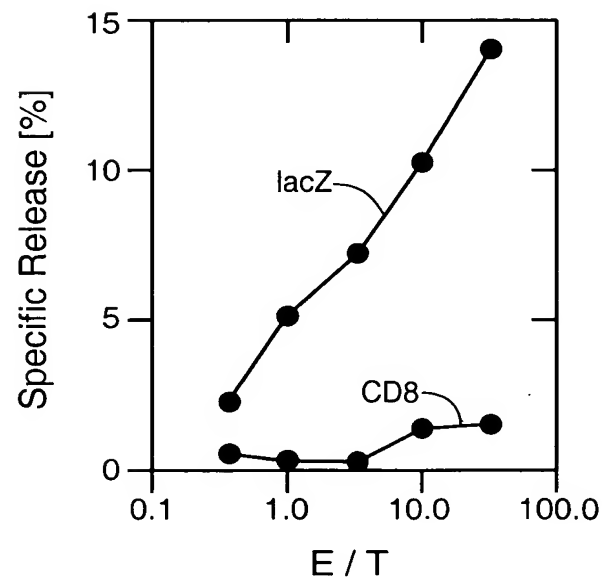
mRNA Coding

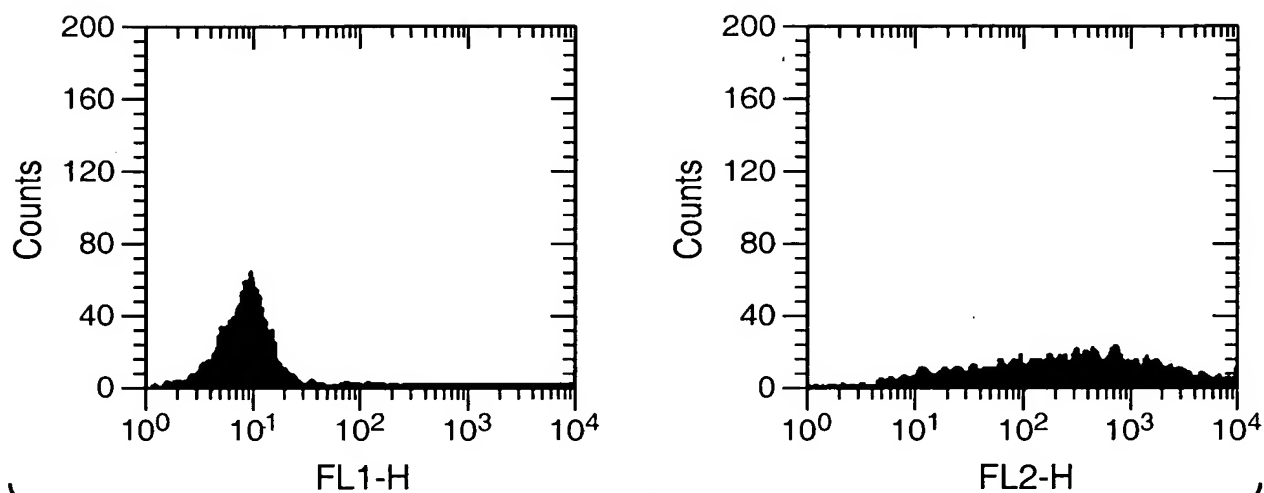
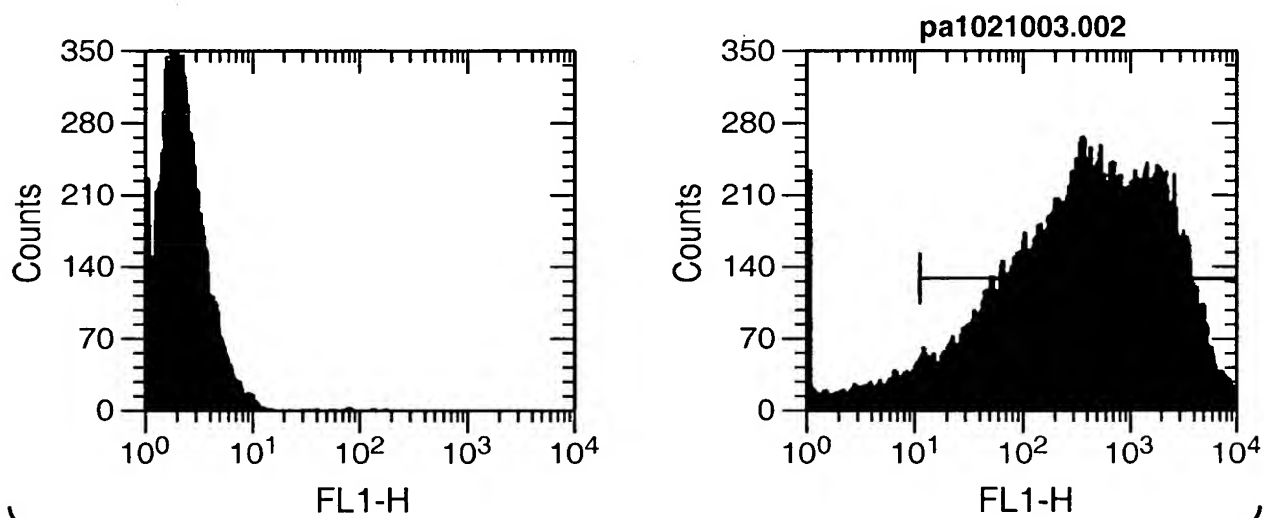
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tccgaatctt	tccaaagaaa	atggacgccg	aacttggtca	gaaggtggac
ctggatatgtg	aagtgttggg	gtccgttttcg	caaggatgct	cttggtctctt
ccagaactcc	agctccaaac	ccccccagcc	caccttcgtt	gtctatatgg
cttcatccca	caacaagata	acgtgggacg	agaagctgaa	ttcgtcgaaa
ctgtttttctg	ccatgaggga	cacgaataat	aagtacgttc	tcaccctgaa
caagttcagc	aaggaaaacg	aaggctacta	tttctgctca	gtcatcagca
actcgggtgat	gtacttcagt	tctgtcgtgc	cagtccttca	gaaagtgaac
tctactacta	ccaagccagt	gctgcgaact	ccctcacctg	tgcaccctac
cgggacatct	cagccccaga	gaccagaaga	ttgtcggccc	cgtggctcag
tgaaggggac	cggattggac	ttcgcctgtg	atatttacat	<u>ctgggcaccc</u>
<u>ttggccggaa</u>	<u>tctgcgtggc</u>	<u>ccttctgctg</u>	<u>tccttgatca</u>	<u>tcactctcat</u>
<u>ctgctaccac</u>	<u>aggagccgaa</u>	agcgtgtttg	caaagtgtccc	agtatagcat
gcttgtgcct	caaactgcaa	ggaagcaagt	ggtatgaatc	tgtgatctgc
tcagctctgg	ctgtgagcat	cagatgtaac	aaatcaaagt	caggagaact
gccttttagcg	gtgcacctgg	acatcagagc	cccttgtaag	aactgggaaa
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ctgtcactga	aggctgtagt	agaatccaat	taa	

FIG._2B

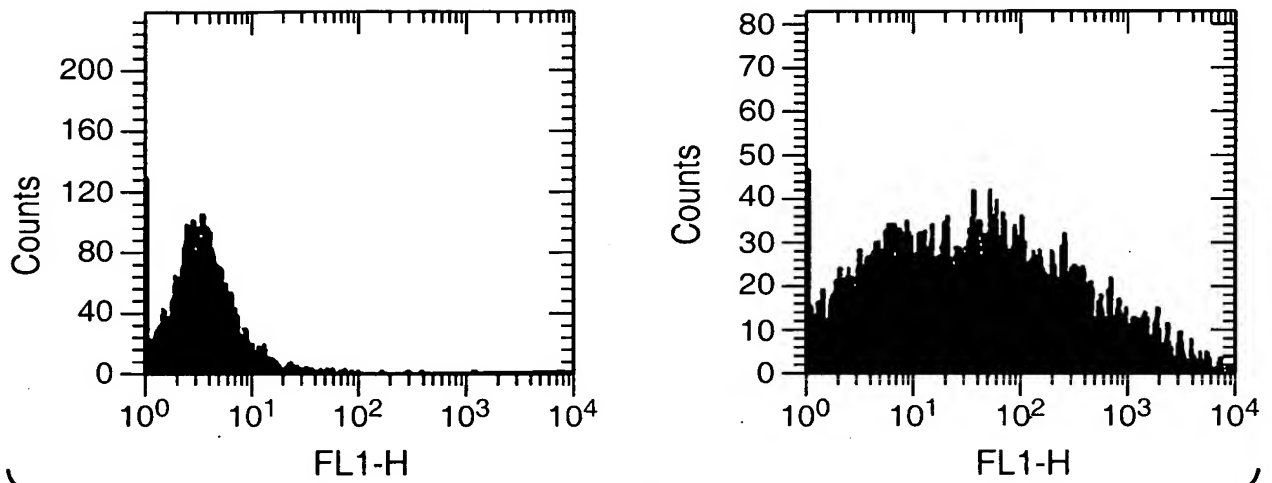
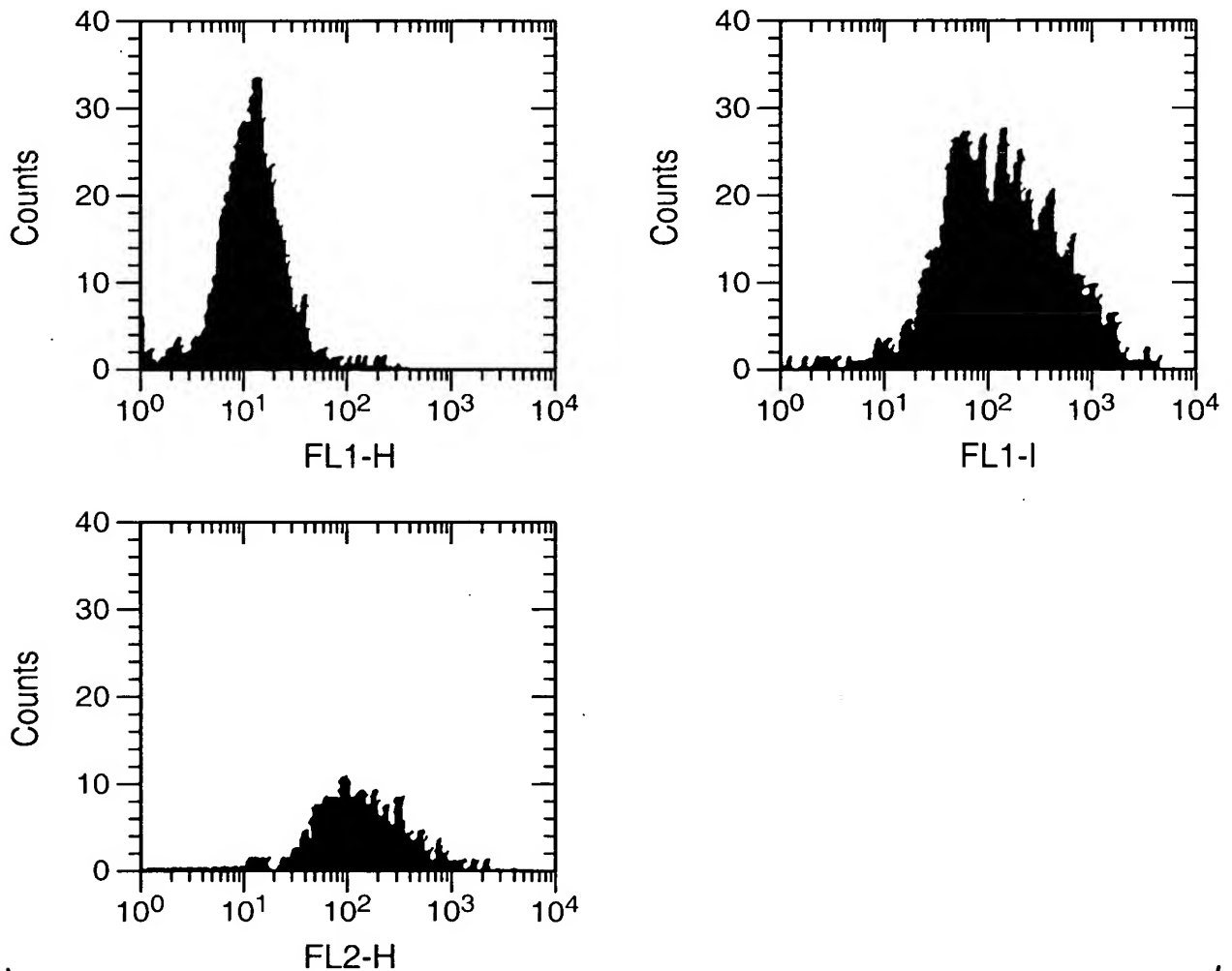
**FIG._3A****FIG._3B****FIG._4**

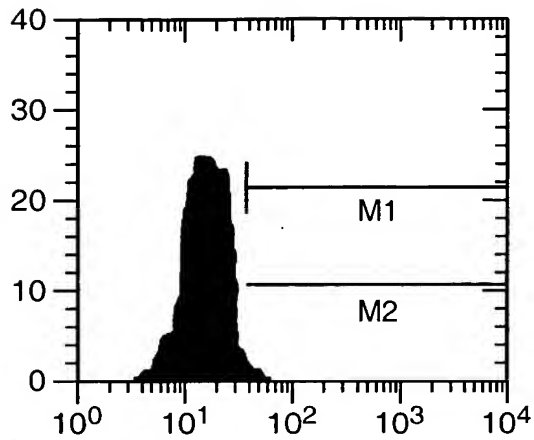
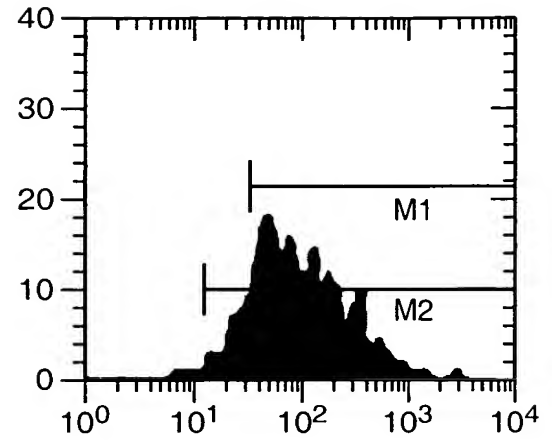
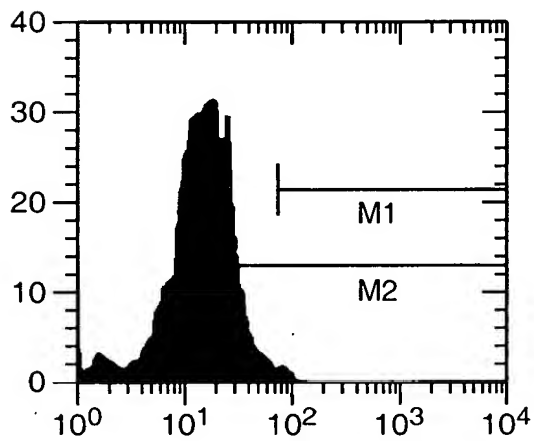
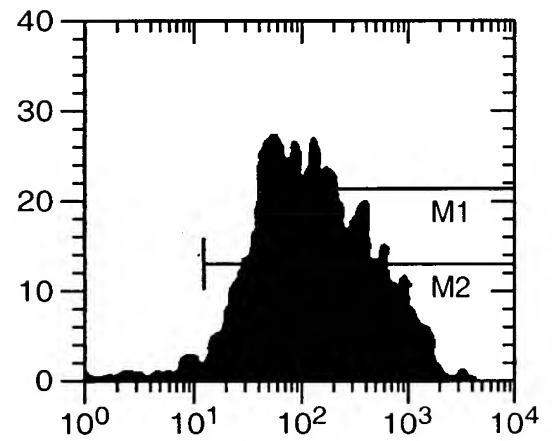
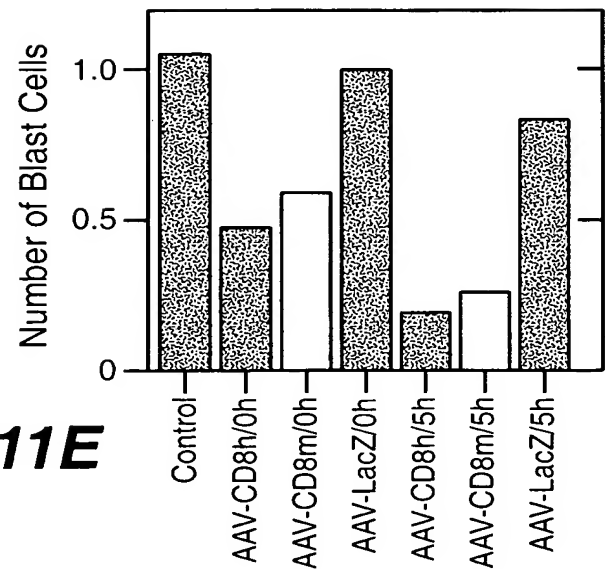
**FIG._5A****FIG._5B****FIG._6A****FIG._6B**

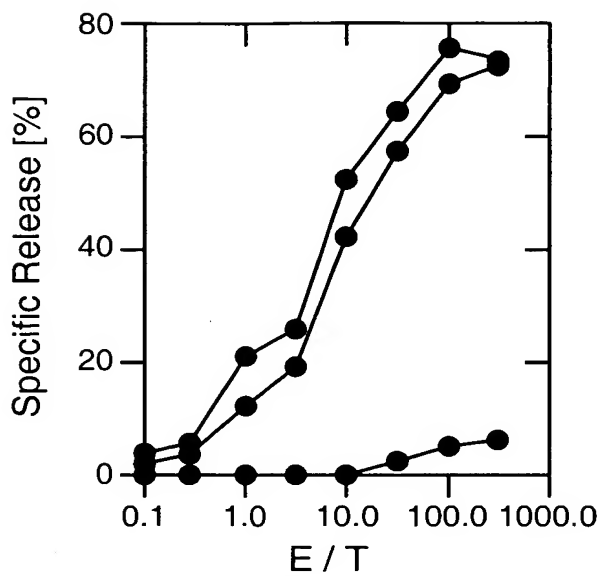
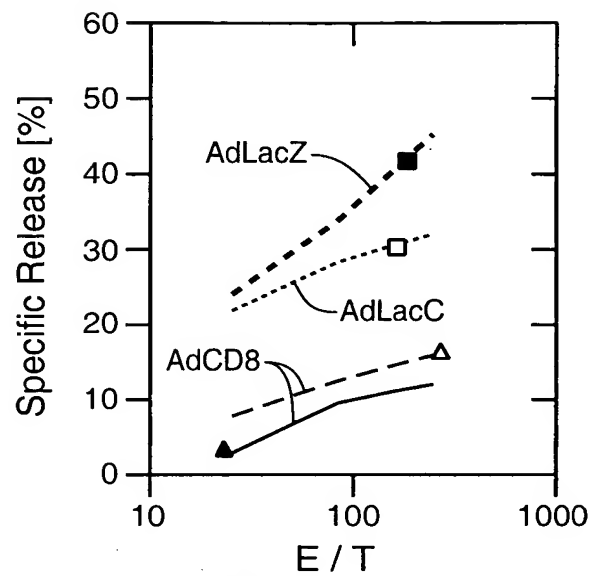
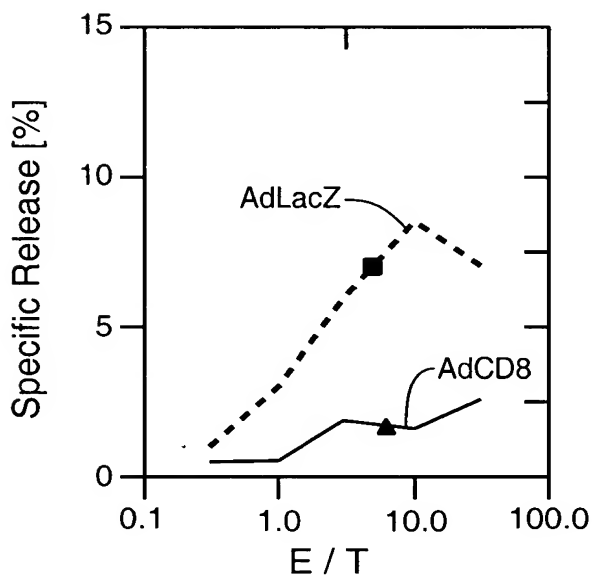
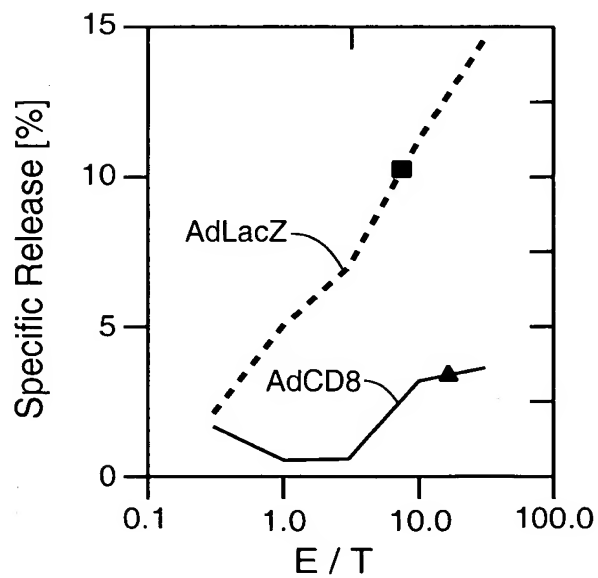
**FIG. 7****FIG. 9****FIG. 8A****FIG. 8B**

**FIG. 10A****FIG. 10B**

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**FIG. 10C****FIG. 10D**

**FIG. 11A****FIG. 11B****FIG. 11C****FIG. 11D****FIG. 11E**

**FIG. 12****FIG. 13****FIG. 14A****FIG. 14B**

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Hemoglobin β mRNA

1 acatttgct ctgacacaac tgtgttcaact agcaacctca aacagacacc atggtgcatc
61 tgactcctga ggagaagtct gccgttactg ccctgtgggg caaggtgaac gtggaatgaag
121 ttggtgggga ggccttgggc aggcctgctg tggctaccc ttggaccag aggttcttg
181 agtccttgg ggaatctgcc actcctgatg ctgttatggg caaccctaag gtgaaggctc
241 atggcaagaa agtgctcggg gcccttagtg atggcctggc tcacctggac aacctcaagg
301 gcaccttgc cacactgagt gagctgcact gtgacaagct gcacgtggat cctgagaact
361 tcaggctcct gggcaacgtg ctggtctgtg tgcggccca tcacttggc aaagaattca
421 cccaccagt gcaggctgcc taccagaaag tggggctgg tgggctaata gccctggccc
481 acaagtatca ctacgtcgc ttcttgctg tccaatttct attaaagggt ccttgttcc
541 ctaagtccaa ctactaaact gggggatatt atgaagggcc ttgagcatct ggattctgcc
601 taataaaaaa cattatttt cattgc

FIG._15

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GATA-binding protein

mRNA

1 gcaaaggcca aggccagcca ggacaccccc tgggatacaca ctgagcttgc cacatcccca
 61 aggcggccga accctccgca accaccagcc caggttaatc occagaggct ccatggagtt
 121 cctggccctg gggctccctg ggacctcaga gccctcccc cagtttgttg atctgctct
 181 ggtgtctcc acaccagaat caggggtttt ctccctct gggctgagg gcttgatgc
 241 agcagcttc tccactgcc cgagcacagc caccgtgca gctgoggcac tggcclacta
 301 cagggacgt gaggctaca gacactcccc agctttcag gtgtacccat tctcaactg
 361 tatggagggg atcccagggg gctcaccata tgcggctgg gctacggca agaoggggct
 421 ctacctgcc tcaactgtgt gtccacccg cgaggactct cctcccagg cgtggaaga
 481 tctgatgga aaaggcagca ccagctctt ggagacttg aagacagagc ggtgagccc
 541 agacctctg accctgggac ctgcadgcc ttcatcact cctgtccca atagtctta
 601 tgggggccct gactttcca gtacctct tctccacc gggagcccc tcaatcagc
 661 agcctatcc tctccaagc ttgtggaac tctccctg cctccctg aggcaggga
 721 gtgtgtgaa tgcggagcaa cagccactcc actgtggcg agggacagga caggccacta
 781 cctatgcaac gctgcggcc tctatcaca gatgaatggg cagaacaggc cctcatccg
 841 gcccaagaag cgctgattg tcagtaaagc ggcaggta ct cagtgcacca actgccagac
 901 gaccaccaag acactgtggc ggagaaatgc cagtgggat ccgtgtgca atgctgcgg
 961 ccttactac aagctacacc aggtgaaccg gccadgacc atgcggaagg atggtattca
 1021 gactcgaac cgcaaggcat ctggaaaagg gaaaaagaaa cggggctcca gctgggagg
 1081 cacaggagca gccgaaggac cagctggtg cttatggtg gtggctggg gcagcggtg
 1141 cggaattgt ggggaggtg ctcaggct gacactggc ccccaggta ctgccatct
 1201 ctaccaaggc ctgggcccgt tggctgtc agggcctgt agccacctca tgccttccc
 1261 tggaccccta ctgggtcac ccaogggct ctcccccaca ggcccatgc ccccaaccac
 1321 cagcactact gtgtggctc cgctcagct atgaggcac agagcatggc ctccagagga
 1381 ggggtggtgt cctctctc ttgtagccag aattctggac aaccaagtc tctgggccc
 1441 aggcaccccc tggctgaac ctcaaagct ttgtaaaat aaaaccacca aagtcctgaa
 1501 aaaaaaaaaa aaaaaaaaaa aa

FIG. 16

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d-aminoevulinate synthasemRNA

1 cacctgcat tcgtcgtcc tcagtgcagg gcaacaggac ttaggttca agatggtgac
 61 tgcagccatg ctgctacagt gctgcccagt gcttgcccgg ggccccacaa gcctcctagg
 121 caaggtggtt aagactcacc agttcctgtt tggattgga cgctgtccca tctggctac
 181 ccaaggacca aactgttctc aaatcacct taaggcaaca aaggctggag gagattctcc
 241 atcttgggcg aagggccact gtcccttcat gctgtcggaa ctccaggatg ggaagagcaa
 301 gattgtgcag aaggcagccc cagaagtcca ggaagatgtg aaggcttca agacagatct
 361 gcctagctcc ctggtctcag tcagcctaag gaagccattt tcoggtcccc aggagcagga
 421 gcagatctct gggaaggta cacacctgat tcagaacaat atgcctggaa actatgtct
 481 cagttatgac cagttttca gggacaagat catggagaag aaacaggatc acacctaccg
 541 tgtgtcaag actgtgaacc gctgggctga tgcatatccc ttgccaac atttcttga
 601 ggcattctgt gcctcaaagg atgtgtccgt ctggtgtagt aatgattacc tgggcatgag
 661 ccgacacct caggtcttc aagccacaca ggagacctg cagcgtcatg gtgctggagc
 721 tggtggcacc cgcaacatct caggcaccag taagtttcat gtggagcttg agcaggagct
 781 ggctgagctg caccagaagg actcagccct gctcttctcc tctgctttg ttgccaatga
 841 ctctactctc ttaccttgg ccaagatct gccagggtgc gagatttact cagacgcagg
 901 caaccatgct tccatgatcc aaggtatccg taacagtga gcagccaagt ttgtcttcag
 961 gcacaatgac cctgaccacc taaagaaact tctagagaag tctaacccta agatacccaa
 1021 aattgtggcc ttgagactg tccactccat ggatggtgcc atctgtccc togaggagtt
 1081 gtgtgatgtg tcccaccagt atggggccct gacctcgtg gatgaggctc atgctgtagg
 1141 actgtatggg tccggggcg ctgggattgg ggagcgtgat ggaattatgc ataagattga
 1201 catcatctct ggaactctg gcaaggcctt tggctgtgtg ggcggctaca ttgccagcac
 1261 ccgtgacttg gtggacatgg tgcgtccta tctgcaggc tcatcttta ccacttctct
 1321 gcccccatg gtgctctctg gagctctaga atctgtcgg ctgctcaagg gagaggaggg
 1381 ccaagccctg aggcgagccc accagcgcaa tgtcaagcac atgcgccagc tactcatgga

FIG. 17A

1441 caggggcctt cctgtcatcc cctgccccag ccacatcatc cccatccggg tgggcaatgc
1501 agcactcaac agcaagctct gtgatctcct gctctccaag catggcatct atgtgcaggc
1561 catcaactac ccaactglcc ccoggggtga agagctcctg cgcttggcac cctccccca
1621 ccacagccct cagatgatgg aagattttgt ggagaagctg ctgctggctt ggactgcggt
1681 ggggctgccc ctccaggatg tgtctgtggc tgcttgaat ttctgtgcc gtctgtaca
1741 ctttgagctc atgagtgagt gggaacgttc ctactcggg aacatggggc cccagtatgt
1801 caccacctat gcttgagaag ccagctgcct aggattcaca cccacctgc gcttacttg
1861 ggtccaggcc tactcctgtc ttctgcttgg ttgtgtgcct ctactgaat tgagcctaaa
1921 aataaagcac aaaccac

FIG._17B

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Glucose-6-phosphate-dehydrogenasemRNA

1 agggacagcc cagaggaggc gtggccacgc tgccggcgga agtggagccc tccgcgagcg
 61 cgcgaggccg ccggggcagg cggggaaacc ggacagtagg ggcggggccc ggccggcgat
 121 ggggatgcgg gagcactacg cggagctgca cccgtgcccg ccggaattgg ggatgcagag
 181 cagcggcagc gggatggca ggcagccggc gggccggcct ccagcgcagg tgcccagagag
 241 gcaggggctg gcctgggatg cgcgcgcacc tgccctcgcc ccgccccgcc cgcacgaggg
 301 gtgttgccg agggcccgcc ccgcacgcct cgccctgaggc gggtcgcctc agcccaggcg
 361 cccgcccccg ccccgccga ttaaatgggc cggcggggct cagcccccg aaacggtcgt
 421 aacttcgggg ctgcgagcgc ggagggcgac gacgacgaag cgcagacagc gtcattggcag
 481 agcaggtggc cctgagccgg acccaggtgt gcgggatcct gcgggaagag ctttccagg
 541 gcgatgcctt ccatcagtcg gatacacaca tattcatcat catgggtgca tgggtgacc
 601 tggccaagaa gaagatctac ccacccatct ggtggctgtt ccgggatggc ctctgcccg
 661 aaaacacctt catcgtgggc tatgccgtt cccgcctcac agtggctgac atccgaaac
 721 agagtgagcc ctcttcaag gccacccag aggagaagct caagctggag gacttcttg
 781 ccgcaactc ctatgtggct ggccagtcg atgatgcagc ctctaccag cgctcaaca
 841 gccacatgga tgccctccac ctggggtcac aggccaaccg cctctctac ctggcctgc
 901 cccgaccgt ctacgaggcc gtcaccaaga acattcaaga gtctgcatg agccagatag
 961 gctggaaccg catcatcgtg gagaagccct tcgggagggg cctgcagagc tctgaccggc
 1021 tgtccaacca catctctcc ctgtccgtg aggaccagat ctaccgcac gaccactacc
 1081 tgggcaagga gatgggtcag aacctatgg tgctgagatt tgccaacagg atctcggcc
 1141 ccatctggaa ccgggacaac atgcctgcg ttatctcac ctcaaggag cccttggca
 1201 ctgagggtcg cgggggctat ttgatgaat ttgggatcat ccgggacgtg atgcagaacc
 1261 acctactgca gatctgtgt ctggtggcca tggagaagcc cgctccacc aactcagatg
 1321 acgtccgtga tgagaaggc aaggtgtga aatgcatctc agaggtgcag gccaacaatg
 1381 tggctctggg ccagtcgtg gggaaccccg atggagaggg cgaggccacc aaaggtacc

FIG. 18A

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1441 tggacgaccc caggtgccc cgggggtcca ccaccgccac tttgcagcc gtcgtcctt
 1501 atgtggagaa tgagaggtgg gatgggggtgc ccttcacctt gcgctgaggc aaggccctga
 1561 acgagcgcaa ggccgaggtg aggtgcagt tccatgatgt ggccggcgac alctccacc
 1621 agcagtgcaa gcgcaacgag ctggtgalcc gcgtgcagcc caacgaggcc gtgtacacca
 1681 agatgatgac caagaagccg ggcatgtct tcaaccccga ggagtcggag ctggacctga
 1741 cctacggcaa cagatacaag aacgtgaagc tccctgacgc ctacgagcgc clcalcctgg
 1801 acgtctctg cgggagccag atgcacttg tgcgcagcga cgagctccgt gaggcctggc
 1861 gtattttcac cccactgctg caccagattg agctggagaa gcccagccc alcccctata
 1921 ttatggcag ccgaggcccc acggaggcag acgagctgat gaagagagt ggtttccagt
 1981 atgagggcac ctacaagtgg gtgaaccccc acaagctctg agccctgggc acccacctc
 2041 acccccgcca cggccacctt ccttcccgcc gcccgacccc gagtcgggag gactccggga
 2101 ccattgaact cagctgcaca ttctggccc cgggctctgg ccacctggc cggcccttg
 2161 ctgctgtac tacccgagcc cagctacatt cctcagctgc caagcactg agaaccctt
 2221 ggcccdcca gacctgct gagccagga gctgagtcac ctctccact cactccagcc
 2281 caacagaagg aaggaggagg gcgccattc gtctgtcca gagctattg gccactgggt
 2341 ctactcctg agtggggcca ggtgggagg gagggacaag ggggaggaaa ggggcgagca
 2401 cccagtgag agaactgcc tgtggcctg ccgcccagcc tcagtccac ttgacattc
 2461 ttgtaccag caacatctg agcccccctg atgtcccctg tccaccaac tctgcactc
 2521 atggccaccc cgtgccacc gtaggcagcc tctctgat aagaaaagca gacgcagcag
 2581 ctgggaccoc tcccaacctc aatgcctgc cattaaatcc gcaaacagcc aaaaaaaaaa
 2641 aaaaaaaaaa

FIG. 18B

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Ornithine carbamoyl transferase

mRNA

1 gagccccagg actgagatat ttltactata ccttctctat catcttgac ccccaaaata
 61 gcttccaggg cacttctatt tgttttgig gaaagactgg caattagagg tagaaaagtg
 121 aaataaatgg aaatagtact actcagggct gtcacatcta catctgtgtt ttgcagtg
 181 caatttgcatt ttctgagtg agttacttct actcaccttc acagcagcca gtaccgcagt
 241 gccttgcata tattatatcc tcaalgagta ctgtcaatt gattttgtac atgcgtgtga
 301 cagtataaat atattatgaa aaatgaggag gccaggcaat aaaagagtca ggatttcttc
 361 caaaaaaaat acacagcggg ggagcttggc ataaagtca aatgctcta caccctgccc
 421 tgcagtatct ctaaccaggg gacttgata aggaagctga agggtgatat taccttgc
 481 cctcactgc aactgaacac atttctagt tttaggtgg ccccgctgg ctaactgct
 541 gtggagttt caagggcata gaatcgtct ttacacaatt aaaagaagat gctgttaat
 601 ctgaggatcc tgttaaaca tgcagcttt agaatgggc acaactcat ggttcgaaat
 661 ttccggtgtg gacaaccact acaaaataaa gtgcagctga agggccgtga ccttctact
 721 ctaaaaaact ttaccggaga agaaataaa tatatgctat ggctatcagc agatctgaaa
 781 tttaggataa aacagaaagg agagtattg cctttattgc aagggaagtc cttaggcagt
 841 attttgaga aaagaagtac tgaacaaga ttgtacag aaacaggctt tgcactctg
 901 ggaggacatc ctgttttct taccacaca gatactcatt tgggtgtgaa tgaagctc
 961 acggacacgg ccgtgtatt gtctagcatg gcagatgcag tattggctcg agtgtataaa
 1021 caatcagatt tggacaccct tgctaaagaa gcatccatcc caattatcaa tgggctgtca
 1081 gatttgatcc atctatcca gatcctggct gattacctca cgtccagga acactatagc
 1141 tctctgaaag gtcttaccct cagctggatc ggggatggga acaatctct gactccatc
 1201 atgatgagcg cagcgaaatt cggaatgcac ctccaggcag ctactcaaaa gggttatgag
 1261 ccggaigcta gtgtaacaa gttggcagag cagtatgcca aagagaatgg taccaagctg
 1321 ttgctgaaa atgatccatt ggaagcagcg catggaggca atgtattaat tacagacact
 1381 tggataagca tgggacaaga agaggagaag aaaaagcggc tccaggctt ccaagggtac

FIG. 19A

1441 cagggtacaa tgaagactgc taaagttgct gcctctgact ggacatttt acactgcttg
1501 cccagaaagc cagaagaagt ggalgatgaa gtcttttatt ctctctgac actagtgttc
1561 ccagaggcag aaaacagaaa gtggacaatc atggctgtca tgggtgccct gctgacagat
1621 tactcacctc agctccagaa gcctaaattt tgatgttgtg ttacttgtca agaaagaagc
1681 aatgttcttc agtaacagaa tgagttgggt tatggggaaa agagaagaga atctaaaaaa
1741 taaacaaatc cctaacacgt ggtatgggtg aaccgtatga tatgctttgc cattgtgaaa
1801 ctttccttaa gcctttaatt taagtgtgta tgcactgtaa tacgtgctta actttgctta
1861 aactctctaa ttcccaattt ctgagttaca ttagatatc atattaatta tcatatacat
1921 ttacttc

FIG._19B

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 α -L-iduronidasemRNA

1 gtcacatggg gtgcgcgcc agactccgac ccggaggcgg aaccggcagt gcagcccgaa
 61 gccccgcagt ccccgagcac gcgtggccat gcgtccctg cgcccccgcg ccgcgctgct
 121 ggcgctcctg gcctcgctcc tggccgcgcc ccgggtggcc ccggccgagg ccccgcacct
 181 ggtgcaggtg gacgcggccc gcgcgctgtg gccctgcgg cgcttctgga ggagcacagg
 241 ctctgcccc ccgtgccac acagccaggc tgaccagtac gtcctcagct gggaccagca
 301 gctcaacctc gcctatgtgg gcgccgtccc tcaccgcggc atcaagcagg tccggaccca
 361 ctggctgctg gagcttgtca ccaccagggg gtccactgga cggggcctga gctacaact
 421 caaccacctg gacgggtact tggaccttct cagggagaac cagctcctcc cagggttga
 481 gctgatgggc agcgccctgg gccacttcac tgactttgag gacaagcagc aggtgttga
 541 gtggaaggac ttggtctca gctggccag gagataatc ggtaggtacg gactggcgca
 601 tgtttcaag tgaacttcg agacgtggaa tgagccagac caccacgact ttgacaacgt
 661 ctcatgacc atgcaaggct tctgaacta ctacgatcc tgcgcggagg gtctgcgcgc
 721 cgccagcccc gccctgcggc tgggaggccc cggcgactcc ttccacccc caccgcgatc
 781 cccgtgagc tggggcctcc tgcgccactg ccacgacggc accaacttct tcactgggga
 841 ggccggcgctg ccgctggact acatctccct ccacaggaag ggtgcgcgca gctccatctc
 901 catctggag caggagaagg tcgtgcgca gcagatccgg cagctctcc ccaagttgc
 961 ggacaccccc attacaacg acgaggcgga ccgcctggtg ggctggctcc tgccacagcc
 1021 gtggagggcg gacgtgacct acgcggccat ggtgtgaag gtcacgcgc agcatcagaa
 1081 cctgctactg gccaacacca cctcgcctt cccctacgg ctctgagca acgacaatgc
 1141 ctctdgagc taccacccgc accccttgc gcagcgcacg ctacccgcg gcttcaggc
 1201 caacaacacc cgccgcgcg acgtgcagct gttgcgcaag ccggtgtca cggccatggg
 1261 gctgtggcg ctgctggtg aggagcagct ctgggccgaa gtgtgcagg ccgggaccgt
 1321 cctggacagc aaccacacgg tgggcgtct gccagcgcc caccgcccc agggcccggc
 1381 cgacgcctgg cgcgcgcgg tgctgatcta cgcgagcgac gacacccgcg cccaccccaa

FIG. 20A

1441 ccgcagcgtc gcggtgaccc tgcggctgcg cgggglgccc ccgggccggg gcctggtcta
1501 cgtcacgcgc tacctggaca acgggctctg cagccccgac ggcgagtggc ggcgcdtggg
1561 ccggcccgtc ttccccacgg cagagcagtt ccggcgcctg cgcgcggctg aggacccggt
1621 ggccgcggcg ccccgccctt tacccgcggc cggccgctg acctgcgcc ccgcgtgcg
1681 gctgccgtcg ctttgcctg tgacgtgtg tgcgcgccc gagaagccgc ccgggcaggt
1741 cgcgcggctc cgcgcctgc cctgaccca agggcagctg gttctggtct ggtcggatga
1801 acacgtgggc tccaagtgcc tgtggacata cgagatccag ttctctcagg acggtlaaggc
1861 gtacaccccg gtcagcagga agccatcgac cttcaacctt ttgtgttca gccagacac
1921 aggtgctgtc tctggctcct acgagttcg agccctggac tactggggcc gaccaggccc
1981 cttctcggac cctgtccgt acctggaggt cctgtgcca agagggcccc catccccggg
2041 caatccatga gcctgtgtg agccccagt gggtgcacct ccacgggcag tcagcgagct
2101 ggggctgcac tgtgccatg ctgccctcc atcacccctt ttgcaatata ttttatatt
2161 ttattattt ctttatac ttgtaaaaa aaaaaaa

FIG._20B

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 β -glucosidasemRNA

1 gctaacctag tgccatagc taaggcaggc acctgcatcc ttgttttgt ttagtggatc
 61 ctctatcctt cagagactct ggaacccctg tggctcttc tcatctaata gaccctgagg
 121 ggatggagtt tcaagtcct tcagagaggg aatgtcccaa gcctttgagt agggtaagca
 181 tcatggctgg cagcctcaca ggtttgcttc tacttcaggc agtgtcgtgg gcatcagggt
 241 cccgccccctg catccctaaa agcttcggct acagctcggg ggtgtgtgtc tgcaatgcc
 301 catactgtga ctctttgac cccccgacct ttctgccct tggtaacctc agccgctatg
 361 agagtacacg cagtggggcg cggaaggagc tgagtatggg gccatccag gtaatacaca
 421 cgggcacagg cctgctactg acctgcagc cagaacagaa gtccagaaa gtgaagggat
 481 ttgagggggc catgacagat gctgctgtc tcaacatcct tgcctgtca cccctgccc
 541 aaaatttgc acttaaatcg tacttctctg aagaaggaat cggatataac atcatccggg
 601 taccatggc cagctgtgac ttctccatcc gacctacac ctatgcagac acctgatg
 661 atttcagtt gcacaattc agcctccag aggaagatac caagctcaag atacctga
 721 ttacogagc cctgcagttg gccagcgtc ccgtttact cctgccagc cctgggacat
 781 caccacttg gctcaagacc aatggagcgg tgaatggaa ggggtcactc aaggacagc
 841 ccggagacat ctaccaccag acctgggcca gatacttgt gaagttcctg gatgctatg
 901 ctgagcaca gttacagttc tgggcagtga cagctgaaa tgagccttct gctgggctgt
 961 tgagtggata ccccttcag tgcttgggt tcacctga acatcagcga gacttcattg
 1021 cccgtgacct aggtcctacc ctgccaaca gtactacca caatgtccg ctactcatg
 1081 tggatgacca acgttgctg ctgccccact gggcaaagg ggtactgaca gaccagaag
 1141 cagctaaata tgtcatggc attgctgtac attggtacct ggactttctg gctccagcca
 1201 aagccacct aggggagaca caccgctgt tcccaacac catgctctt gctcagagg
 1261 cctgtgtggg ctcaagttc tgggagcaga gtgtcgggt aggtcctgg gatcgagga
 1321 tgcatgacag ccacagcatc atcacgaacc tctgtacca tgtgtcggc tggaccgact
 1381 ggaacctgc cctgaacccc gaaggaggac ccaattgggt gcgtaactt gtcgacagtc

FIG._21A

1441 ccatcattgt agacatcacc aaggacacgt ttacaaaca gcccatgttc taccacctg
1501 gccacttcag caagttcatt cctgagggct ccagagaggt ggggctgggt gccagtcaga
1561 agaacgaact ggacgcagtg gcactgatgc atcccgatgg ctctgctgtt gtggtcgtgc
1621 taaaccgctc ctctaaggat gtgcctctta ccatcaagga tcctgctgtg ggcttcctgg
1681 agacaatctc acctggctac tcattcaca cctacctgtg gcatcgccag tgatggagca
1741 gatactcaag gaggcactgg gctcagcctg ggcattaaag ggacagagtc agctcacacg
1801 ctgtctgtga ctaaagaggg cacagcaggg ccagttgtgag ctacagcga cgtaagccca
1861 ggggcaatgg ttgggtgac tcacttccc ctctaggtgg tgcccagggc tggaggcccc
1921 tagaaaaaga tcagtaagcc ccagtgtooc ccagccccc atgcttatgt gaacatgcgc
1981 tgtgtgctgc ttgcttggga aactngcctg ggiccaggcc tagggtgagc tcactgtccg
2041 taaaacaca agatcagggc tgagggtgag gaaaagaaga gactaggaaa gctgggcccc
2101 aaactggaga ctgttctct ttctagaga tgcagaactg ggcccgtgga gcagcagtg
2161 cagcatcagg gcggaagcct taaagcagca gcgggtgtgc ccaggcacc agatgattcc
2221 tatggcacca gccaggaaaa atggcagctc ttaaaggaga aaatgttga gccc

FIG. 21B

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 α -galactosidasemRNA

1 aggttaatct taaaagccca ggttaccgc ggaaattat gctgtccgt caccgtgaca
 61 atgcagctga ggaaccaga actacatcg ggctgcgcg ttgcgctcg ctccdgcc
 121 ctggttcct gggacatccc tggggctaga gcactggaca atggattggc aaggacgcct
 181 accatgggct ggctgcactg ggagcgcttc atgtgcaacc ttgactgcca ggaagagcca
 241 gattcctgca tcagtggaa gctcttcag gagatggcag agctcatggt ctgagaaggc
 301 tgaaggatg caggttatga gtacctcgc attgatgact gttgatggc tcccaaaga
 361 gattcagaag gcagactca ggcagacct cagcgcttc ctatgggat tgcagcta
 421 gctaattatg ttacagcaa aggactgaag ctagggattt atgcagatgt tggaaataaa
 481 acctgcgcag gctccctgg gagtttggg tactacgaca ttgatgcca gaccttgc
 541 gactggggag tagatctgt aaaattgat ggtgttact gtgacagtt ggaaaattg
 601 gcagatggtt ataagcacat gtcttggcc ctgaatagga ctggcagaag cattgtgac
 661 tctgtgagt ggctctta tatgtggcc ttcaaaagc ccaattatac agaaatcca
 721 cagtactgca atcactggcg aaatttgc gacattgat attcctggaa aagtataag
 781 agtatctgg actggacatc tttaaccag gagagaattg ttgatgtgc tggaccagg
 841 ggttggatg accagatat gttagtatt ggcaacttg gcctcagct gaatcagcaa
 901 gtaactcaga tggccctcg ggctatcat gctgctctt tattcatgtc taatgacct
 961 cgacacatca gccctcaagc caaagcttc ctccaggata aggacglaa tgccatcaat
 1021 caggacccct tgggcaagca aggttaccag ctagacagg gagacaact tgaagtgtg
 1081 gaacgacctc ttcaggctt agcctgggct gtagctatga taaaccggca ggagattgt
 1141 ggacctcgt ctataccat cgcagttgt tccctggga aaggatggc ctgtaacct
 1201 gcctgctca tcacacagct cctccctg aaaggaagc tagggtcta tgaatggact
 1261 tcaaggtaa gaagtcacat aaatcccaca ggcactgtt tgcctcagct agaaaatata
 1321 atgcagatgt cattaaaaga ctactttaa

FIG. 22